The Initial Teacher ePortfolio:

Towards a Streamlined Platform

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Abstract

The Galway Mayo Institute of Technology (GMIT) is a provider of Teacher Education (TE) for second level teachers in the technical subjects *Construction Studies* and *Design and Communication Graphics.* In line with the requirements of the Teaching Council, Ireland, GMIT facilitates student teachers to develop a professional teaching and learning portfolio. Since 2011, GMIT has researched and pioneered innovative approaches to the development of an electronic Teaching and Learning Portfolio (ePortfolio) in the contexts of eAssessment; initiatives that have been commended by the Teaching Council in their report of the programme in January 2014. The ePortfolio has a threefold purpose: to showcase teaching philosophies, innovations and resources, to act as a live teaching tool in the classroom, and to facilitate e assessment, by peers and staff. The institute currently uses *Weebly* and *Excel* tools for these purposes. The former provides a professional showcase of learning outputs and the latter acts as a repository management system for students teaching resources and a platform for eAssessment. This current action research critically examines the effectiveness of these tools, from both student and staff perspectives. Research methodologies include: individual online (Moodle) critical reflections, questionnaire surveys, and focus groups. The research finds high levels of satisfaction with both tools, on the part of staff and students alike, from the perspectives of *construction, accessibility, easy navigation, showcase potential, cost,* and *effective use in the classroom*. The initial feedback related to a critique of using two independent tools. However, further research suggests that students would prefer one comprehensive platform that should have two distinct functions; 1) an open access area that presents a selection from their teaching and 2) a secure repository for teaching resources. Examining secure cloud based options that will act as both a showcase for work and as a resource repository will constitute the next phase/cycle of action research.

Keywords

Action research, teacher education, ePortfolio, Weebly, Excel, eAssessment

1. Introduction

Galway-Mayo Institute of Technology (GMIT) is based at five locations in the west of Ireland. The campus at Letterfrack is run in partnership with Connemara West. Since 1987 the partnership has managed and run furniture design and manufacturing courses. GMIT Letterfrack commenced the B.Sc. (Honours) Programme in Design & Technology Education, an Initial Teacher Education (ITE) programme in 2006. Graduates of this programme are qualified to teach Materials Technology (Wood) and Technical Graphics to Junior Certificate and Construction Studies and Design and Communication Graphics (DCG) to Leaving Certificate honours standard in the Irish second level school system. The feedback from schools in which GMIT graduates and teaching practice students are employed and placed is overwhelmingly positive and we believe our institute's participation in Teacher Education has enriched the delivery of the technology based subjects at second level schools.

Following the Report of the International Review Panel on the Structure of ITE provision in Ireland (Structure of Initial Teacher Education Provision in Ireland:, 2012) and informed by the Teaching Council guideline documents, the GMIT ITE programme was updated in 2013. The design of the reconceptualised programme is based upon a delivery philosophy of full integration of pedagogical subject knowledge and skills. Self-reflection (for both staff and students), critical thinking and research are given prominence throughout the four years of the programme. Programme content, particularly discipline specific knowledge and skills are practiced and developed further during Teaching Practice modules (GMIT, 2013). In parallel with Teaching Practice modules, students develop a Professional Teaching Portfolio which is a key element in transitioning from student to teacher.

Traditionally, these two components of ITE consisted of substantial volumes of paper based documents. In the case of the Teaching Practice files there were lesson plans, schemes of work, teaching aids and resources, school policy documents, pupil records, etc., often running to three, four or five lever arch folders. The Professional Portfolio, while only one folder, was nevertheless a significant paper repository, containing evidence of work, lesson plans, assessment strategies, reflections, etc.

In the 21st century world of electronic communication mandating students to produce hard copy documents of the elements mentioned above seemed decidedly "last century", not to mention the environmental impact in the consumption of paper and print cartridges.

It is also increasingly obvious that young people are regular and comfortable users of ICT (Dunne, 2012; Voogt, 2013). Many children in the developed world are daily users of ICT in both their personal lives (social media communication) and in their school lives where there is almost an expectation that ICT is integrated into their learning. Indeed, the phrase "digital natives" has been coined to reflect that fact that communicating using a range of mobile devices blogging, social media sites, etc., has become as intuitive to young people as learning their native spoken language.

It was therefore assumed that moving towards "paperless" electronic copies of Teaching Practice documentation would reduce the workload for students as well as facilitating increased levels of student engagement in the areas of developing their teaching practice (virtual) files and in constructing a professional teaching ePortfolio.

This current action research critically examines the effectiveness, from both student and staff perspectives, of the two tools, **Weebly** and **Excel**, that were used to transition from a paper based to an electronic format.

2. Professional Teaching Portfolios

The use of teaching portfolios in both teacher education programmes and the continuing professional development of practising teachers is well established (O'Farrell, 2007). In Ireland, the currency of the teaching portfolio is underlined by the fact that the Teaching Council lists the development of a professional portfolio as a "mandatory element of an ITE programme" (Teaching Council of Ireland, 2011).

The literature indicates that teaching portfolios can have several functions; 1) to facilitate reflection, self-assessment and self-evaluation of one's teaching practices thereby leading to strategies for developmental purposes; (2) as elements of undergraduate and postgraduate programmes in learning and teaching; 3) as a means of assessing candidates for teaching awards or promotion; 4) a mixture of some (or all) of these purposes (O'Farrell, 2007; Lim, 2014).

There are many platforms available to construct a professional teaching ePortfolio. Both staff and students at GMIT have had some experience with Mahara, Pebbledash, WordPress and Weebly. After some consideration, **Weebly** was selected as the most appropriate for GMIT student teachers. Weebly is a consumer service that allows users to create a website that is unique to them and free (Weebly, 2104). While there are many potential commercial users of Weebly, it is also a popular platform for building professional portfolio webpages. The

simple “drag and drop” functions for building a site, which can be seen on the left hand side of the image in figure 1, are simple to use and very intuitive.

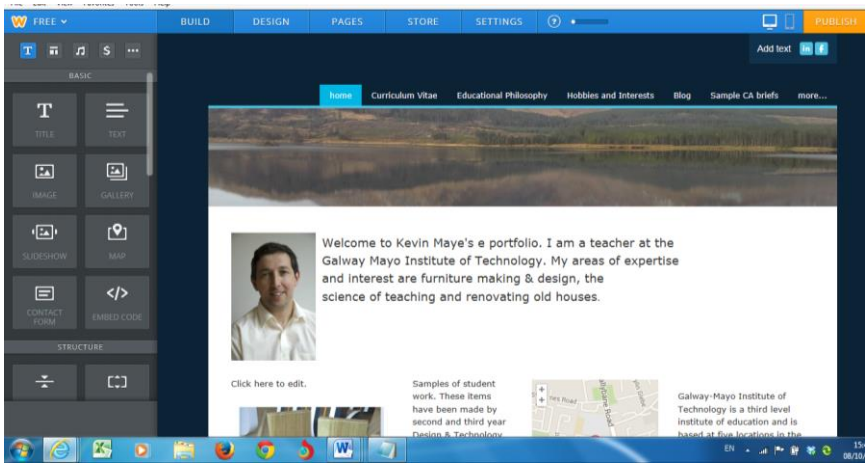

Figure 1 – Example of Weebly page in “build” mode

The ePortfolio which was the subject of this research has a threefold purpose; a) to showcase teaching philosophies, present innovations and resources, b) to act as a live teaching tool in the classroom, and c) to facilitate eAssessment, by peers and staff.

This is consistent with the Teaching Council recommendations which suggests that,

> *Student portfolios begun during the teacher education programme should provide the focus for personal and professional development during the newly qualified teacher’s induction period. They should further provide the framework for the teacher’s ongoing reflection and professional development.* (Teaching Council of Ireland, 2011)

3 Teaching Practice Files

Prior to commencing Teaching Practice, GMIT students are required to demonstrate that they can provide a quality service. To this end, students are required to submit their teaching files for initial assessment. (GMIT, 2013) These files must include the following:

- A School Profile
- School Location
- School Contact Details
- School Policy Documents
- Teaching Timetable
- Schemes of Work.
- Lesson Plans

As mentioned in the introduction above, compiling all these documents results in students having multiple folders bulging with paper by the end of their teaching practice modules. As well as providing the evidence of having undertaken sufficient preparation and planning for teaching practice, these folders also allowed teaching practice supervisors to assess and evaluate student work. In the absence of hard copy files, it was necessary to develop a method to allow both staff and students to navigate quickly through electronic files.

A template Table of Contents (ToC) page was created using Excel as shown in figure 2. Students were instructed to create hyperlinks from the individual lesson "boxes" to each unique lesson plan that they created during their Teaching Practice Placements.
Excel was selected as it is freely accessible to all GMIT students and they would have had prior experience with using Excel in 1st and 2nd year modules.

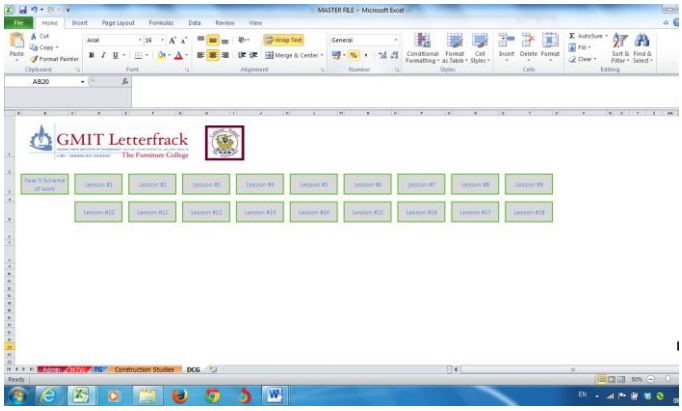

Figure 2 – Copy of "table of contents" page for Teaching Practice folder

4. Research Methodology

Action Research is a research methodology that has been widely adopted by academics in higher education and particularly by those of involved in teacher education (McNiff, 2014). Action research is a practical way of looking at your own practice. It is done by oneself and because it involves an individual thinking about and reflecting on one's own work, it can also be called a form of self-reflective practice. Notwithstanding the critique by Atherton (2011) of the role that reflective practice is expected to play in teaching, reflective practice continues to be recognised as being a significant element of Initial Teacher Education (ITE) programmes throughout the world. So, as a teacher educator it is appropriate that I adopt a research methodology that allows me to examine my own practice within the context of critical reflection. The action research framework allows me to demonstrate how I have

carried out a systematic investigation of initatives undertaken as well as continuing to develop my own teaching. The research undertaken here is the first cycle of a longer term action research project which aims to streamline the entire Teaching Practice process at GMIT.

The research methodologies employed were: individual online (Moodle) critical reflections from five staff regarding the use of the Excel file management template; questionnaire surveys addressed to students, also exploring the use of Excel and focus groups to capture the feedback regarding the use of Weebly.

The Moodle reflections from staff members were prompted by asking them to reflect on three advantages and three disadvantages of using the Excel file management template. The questionnaires were completed by 13 fourth year students (from a class of 17). The first three questions offered a Likert scale to capture their responses with respect to the efficiency of, ease of use and degree of instruction given in the Excel template. Questions four and five asked students to list advantages and disadvantages, with the remaining five questions prompting students to suggest potential design changes or alternative formats that might be explored. Two focus groups, that is, third and fourth year students, were convened. A total of 39 statements were documented from both focus groups. Apart from simply quantifying responses to Likert scale questions, thematic analysis was employed to analyse all remaining data gathered. The emergent themes are outlined in the findings below.

5. Findings

The research finds high levels of satisfaction with both tools, on the part of staff and students alike, from the perspectives of *construction, accessibility, easy navigation, showcase potential, cost,* and *effective use in the classroom*.

Student feedback on Excel file management

The questionnaire surveys focused on gathering student feedback with respect to the Excel file management template. The responses were overwhelmingly positive. Thirteen students (n=13) took part in the survey. In response to the question of whether the tool was an efficient means of organising their teaching practice files twelve respondents *strongly agreed*, with one respondent *somewhat agreeing*. With respect to the "ease of use" question, ten students *strongly agreed* it was easy to use, with three students indicating that they *somewhat agreed* it easy to use.

When asked about the appropriateness of the format for managing Teaching Practice files, eleven *students strongly* agreed Excel was appropriate, with two respondents *somewhat agreeing.*

The results regarding the level of instruction given on how to use the tool were more equivocal. Eight students either strongly agreed or somewhat agreed that there was sufficient instruction given, while three students neither agreed nor disagreed, and two students disagreed that there was sufficient instruction. These results will be discussed further in section 5.

When students were asked to elaborate on the advantages of the electronic version of the teaching practice files over the hardcopy version, the two dominant themes were that it was easier to organise and update and/or a more efficient use of time (n=10) and reduced printing costs (n=9). Other advantages cited were that it was more professional looking, easier to carry and more reliable. It would appear from the survey that identifying disadvantages proved difficult for students as there were only four comments in this regard, namely;

- Some difficultly with using the hyperlinks (n=2)
- The risk of losing files (n=1)
- Not as easy to proof read (n=1)

Student feedback on Weebly

The focus groups (3rd and 4th year classes) gathered student feedback with respect to their experience with using Weebly. In total there were 27 students involved with the focus group meetings, but not every student contributed to the discussion. The dominant themes that emerged from the focus groups were;

1) Ease of use – not alone was there unanimity that Weebly was easy to use, but several students indicated that they enjoyed the process of building a teaching ePortfolio website
2) Several students commented on the value of an ePortfolio with respect to showcasing their work to potential employers as well as using the ePortfolio as a teaching resource in the classroom.
3) Many students indicated that the current version of Weebly is much improved on previous versions and recommend that the institute continue using Weebly (as the preferred ePortfolio platform) as it is clearly getting better year on year.

4) There was some concern expressed regarding security issues. These concerns relate to two areas – a) the risks of identity theft if users present extensive personal information such as date of birth, where they went to school, personal interests, etc. b) the risk of unauthorised copying of teaching resources.

Students provided valuable insights regarding technical issues. For example, in situations where there is no internet access, the Weebly pages cannot be viewed. One suggestion was to investigate the options of viewing the Weebly pages offline, perhaps by download to an iPad. Uploading resources to Weebly was straightforward, with the exception of PowerPoint slides – several students highlighted this as being problematic.

Staff feedback on Excel file management system

Individual Critical Reflections were gathered using the Virtual Learning Environment (VLE) Moodle. Responses from five teaching practice supervising lecturers were recorded and were predominantly in agreement regarding the advantages, disadvantages and suggestions for improvement to the Excel file management template.

Advantages

- Quick and easy to navigate in terms of locating lessons and resources linked to particular lessons
- Facilitates more thoughtful assessment of student work, than might otherwise take place with the hard copy version, as the teaching practice files can be copied and assessed in more depth after the supervision visit. It also allows for eAssessment
- Content of lesson plans and schemes can be easily compared using the find and search features within the software.

Disadvantages

- Excel is not the most aesthetic of tools to use.
- Can be frustrating and time consuming to locate files when hyperlinks are incorrectly set up
- Getting an "overview" of a series of lessons can be difficult, with the hardcopy files it was possible to layout several plans.
- There is a risk of losing data when using USB memory keys to transfer and store files

Suggestions for improvement

- Explore other software that may be more visually appealing
- Investigate the use of cloud computing platforms such as Office 365, or perhaps use Moodle to a greater extent.

- Investigate platforms that allow students to combine their professional teaching portfolio with their teaching practice resource files.

6. Conclusions and Future Work

At a time when many facets of learning and teaching are being enhanced through the application of ICT, it seemed incongruous that students undertaking teaching practice modules were being asked to produce a substantial volume of hardcopy files, hence the move to electronic format. Similarly, it was assumed that moving from a hardcopy teaching portfolio to an ePortfolio provided an opportunity to enhance the quality of the portfolios as well as improving student engagement with the process.

Based on the findings of this study, the assumptions that quality is enhanced and student engagement is improved, appear to be true. With regard to the use of Excel as a file management tool, both staff and students recorded high levels of satisfaction with the system. *Ease of use* and a significant reduction in printing costs were cited by students as being the main benefits of the format. Staff feedback also highlighted the ease with which files could be navigated and assessed. The students struggled to identify any significant disadvantages. There was some equivocation regarding the level of instruction in using the Excel file management tool. As students would have had tuition in the use of Excel in years one and two of the programme, an assumption was made regarding their level of proficiency and consequently the instruction session on how to set up the ToC page and create hyperlinks was brief. Closer collaboration with colleagues teaching Excel in years one and two should address student concerns in this area.

The student feedback relating to the ePortfolio platform, Weebly, was also very positive, where the data gathered from the focus groups indicated high levels of satisfaction, particularly regarding ease of use and it's potential in showcasing work.

The findings from the study have identified two key challenges which will form the basis of the next phase, in the action research cycle. These are;

1. To investigate the options with regard to streamlining both the teaching practice files and the ePortfolio into a unified format.
2. To research or trial a cloud computing platform which provides both open access (to showcase selected work) and a secure space to act as a repository for teaching resources.

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